

The UCT CCD CV Survey

Patrick A. Woudt and Brian Warner

*Department of Astronomy, University of Cape Town, Rondebosch 7700,
 South Africa*

Abstract. Some results from a high speed photometric survey of faint southern CVs are presented, including 7 new orbital periods.

1. Introduction

We are carrying out a high speed photometric survey of faint southern Cataclysmic Variable stars (CVs) down to $V = 21^m$. The 1.0-m and 1.9-m telescopes at the Sutherland site of the South African Astronomical Observatory, in combination with the University of Cape Town (UCT) CCD camera, have been used to investigate the photometric behaviour of previously unstudied faint southern Nova Remnants (NR) and Dwarf Novae (DN). This survey – about 35% completed to date – fills in a gap. Southern NRs, are severely underobserved even though they make up the majority of the known NRs.

This survey aims to sample the southern CVs in order to improve the database of objects (in particular eclipsing systems) both for statistical purposes and for more detailed structural studies with 8-m class telescopes.

2. Results

For four of the 22 NRs that we observed with high speed photometry, we have obtained orbital periods. This significantly increases the number of known orbital periods for southern NRs. Two of these four NRs are eclipsing systems and in addition show clear superhumps (V630 Sgr and RR Cha). We have furthermore observed 11 DN, and obtained a measure of the orbital period for three of them (AO Oct, XZ Eri and V359 Cen).

Fig. 1 shows two examples of light curves obtained: a NR (V351 Pup), Nova Puppis 1991, and a DN (XZ Eri). The light curve of V351 Pup closely resembles that of the magnetic nova V1500 Cyg (Nova Cygni 1975) at a similar point on its decline from eruption. XZ Eri is an eclipsing system with a very short orbital period (88.1 min), and we expect it to show superoutbursts and superhumps. The orbital periods obtained so far in this survey are given in Table 1.

Acknowledgments. Our research has been supported by grants from the University of Cape Town.

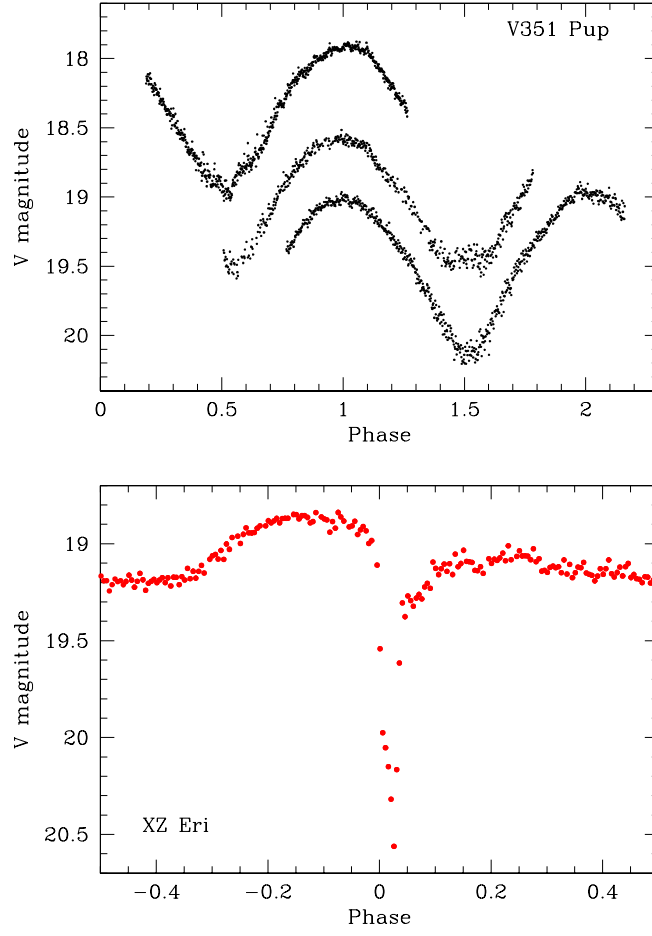


Figure 1. The light curve of V351 Pup (upper panel) and XZ Eri (lower panel).

Table 1. Orbital periods.

Object	Type	$\langle V \rangle$	Period
RS Car	NR	19.0	1.98 h
V359 Cen	DN	18.7	1.87 h
RR Cha	NR	18.2	3.37 h
XZ Eri	DN	19.1	1.47 h
AO Oct	DN	20.5	1.57 h
V351 Pup	NR	18.5	2.84 h
V630 Sgr	NR	17.7	2.83 h